separated from those on the right by a dash, the cross indicating a gap between the thoracic and caudal shields.

The first group represents *G. trachurus*, with an uninterrupted series of shields from the shoulder to the end of the tail; the third the *G. semiarmatus*, with a naked gap between the thoracic shields and the caudals; the fifth the *G. gymnurus*, with the tail completely naked; whilst the second and fourth groups are of special interest as comprising individuals which belong to two different forms, according to whether the right or the left side is examined. It will be observed that the intermediate specimens (*G. semiarmatus*) are the most numerous.

I.

1. 32—31.
2. 30—30.
3. 30—29.
4–6. 29—29.
7, 8. 28—29.
9–13. 29—28.
14–16. 28—28.

II.

17. 18+7—30.
18. 30—12+10.
19. 13+7—29.
20. 28—17+10.
21. 28—14+6.

III.

22. 19+7—17+8.
23. 17+7—19+7.
24. 17+6—18+6.
25. 18+7—16+7.
26. 14+1+6—18+6.
27. 11+7—17+7.
28. 16+8—16+5.
29. 16+8—15+7.
30. 15+5—16+6.
31. 15+8—15+8.
32. 14+7—15+7.
33. 10+2+4—15+3.
34. 14+6—14+6.
35. 14+2—14+3.
36. 14+7—13+7.
37. 14+7—13+7.
38. 14+7—11+7.
39. 12+8—13+7.
40. 13+7—12+6.
41. 12+6—12+7.
42. 12+7—11+6.
43. 12+6—11+7.
44. 11+8—11+7.
45. 10+5—11+5.
46. 10+6—10+6.
47. 9+7—10+7.
48. 8+2—8+3.
49. 7+6—7+6.
50. 6+4—7+4.

IV.

51. 9+3—9.

V.

52. 12—12.
53, 54. 10—10.
55, 56. 7—7.
57. 7—6.
58, 59. 6—7.
60. 5—7.
61–64. 6—6.
65. 6—5.
66. 4—4.

XXXVIII.—*Description of a New Porcupine from East Africa.* By Oldfield Thomas.

Mr. F. J. Jackson, the discoverer of so many new East-African mammals, picked up on the beach at Lamu the skull of a porcupine which, on comparison, appears to me to differ

equally from the northern *Hystrix cristata*, L., and the southern *H. africæ-australis*, Pet. It is not fully adult, the last molar being still quite unused, although in position, and the tooth-change not having yet taken place; this change, however, occurs so late in life in the genus *Hystrix* that, judging by other skulls, we may suppose that this skull would not have greatly altered in size or form in later life.

The species may be called

Hystrix galeata, sp. n.

Skull approximating to that of *H. cristata* in the relative lengths of the nasals and frontals (see measurements below), but markedly different from that, as also from *H. africæ-australis*, by the reduced breadths of the same bones, especially in the interorbital region of the skull; so that the upper inflated part of the skull is more or less parallel-sided, instead of being broadly oval; when viewed from above this appearance is increased by the nasal bones being almost as broad anteriorly as posteriorly and by the ascending process of the premaxillæ being bowed out laterally; the muzzle therefore does not decrease evenly in breadth from the orbits forwards, but is parallel-sided to the level of the anterior point of junction of the nasals and premaxillæ. These processes are also much broader in a vertical direction than in the allied species, and in this respect approach the Indian *H. leucura*. In consequence also of the greater anterior breadth of the nasals and of the bowing outwards of the ascending premaxillary processes the nasal opening is very decidedly larger than in either of the other African species. Supraorbital edges of frontal straight or even slightly concave, the broadest point across the frontals being at the rudimentary postorbital processes, not at the edge of the lacrymal bones. In the side view the skull is remarkable for its extreme height at about $\frac{m.1}{}$, from which point it slopes rapidly down, both forwards and backwards. Lower anterior root of zygoma broad and flattened, as in the northern, not styliform as in the southern species; general size and form of the ante-orbital foramen also very much as in the former species.

The molar teeth appear to be rather rounder in section, less narrow and elongated than in *H. cristata*; but much more material is needed before the value of this character can be at all properly estimated.

Measurements of a Gambian skull of *H. cristata*, of the typical skull of *H. galeata*, and of a Natal skull of *H. africæ-australis* (the last-named is fully adult, the other two have each not yet shed their mp.^{4}) :—

	H. cristata.	*H. galeata.*	*H. africæ-australis.*
Basal length	138	138	151
Zygomatic breadth	86	84	91
Length (round curve) of nasals	100	99	91
„ „ „ of frontal	31	33	47*
Length of parietal (to extreme back of crest)	31	33	33*
Breadth of nasals at anterior end of naso-premaxillary suture	37·5	41	32
Breadth of nasals at posterior end	69·5	55	61
Interorbital breadth at edge of lacrymals	73	62·3	76
Interorbital breadth at rudimentary postorbital processes	68·5	66·5	70·6
Height of skull from palate between $\frac{m.1}{}$	70	76	73·5
Least vertical diameter of lower anterior zygoma-root	5	5·5	1·7
Palate length	77	80	87
Mesial length of premaxillæ	29	25·7	28

These measurements show clearly the conspicuous differences between *H. galeata* and its allies in the relative proportions of the two interorbital breadths, anterior and posterior, in the shape of the nasals, and in the height of the skull, this last being the character from which is derived the name selected for the species.

Hab. Lamu, East Africa.

It is much to be hoped that more specimens of this interesting addition to the fauna of our East-African possessions will soon be brought to Europe, and it may be noted, as a hint to collectors, that a good series of skulls of different ages would be of especial value for the proper comparison of the species with its allies.

XXXIX.—*The Formation of the Skeletal Parts in Echinoderms.* By Carl Chun, of Breslau †.

The share of the mesoderm cells of Echinoderms in the building-up of the elements of the calcareous skeleton is altogether imperfectly understood. After it had already been shown by the older observers that the calcareous bodies are formed by the connective-tissue cells of the gelatinous central

* Fronto-parietal suture closed and its position not quite certain.

† Translated from the 'Zoologischer Anzeiger,' xv. Jahrg., no. 408, December 26, 1892, pp. 470-474.